

Notes on *Morum dennisoni* (REEVE) and Related Species

(Gastropoda : Tonnacea)

BY

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(Plate 12)

THE PURPOSES OF THIS PAPER are threefold: (I) to identify and re-describe the holotype of *Oniscia dennisoni* REEVE, a rare and poorly known species from the West Indies; (II) to provide an annotated list of the names that have been applied to living representatives of the genus *Morum*; (III) to provide an annotated list of the fossil representatives of the genus *Morum* reported from the New World.

A new name, *Morum (Cancellomorum) watsoni* DANCE & EMERSON, is proposed herein to replace *Morum cithara* (WATSON, 1881), which is a secondary homonym of *Morum cythara* (BROGGI, 1814).

I. The Holotype of *Oniscia dennisoni* REEVE, 1842

REEVE's taxon was based on a single shell in the collection of John Dennison (?d. 1864), a leading British shell collector (REEVE, 1842, p. 212, pl. 253, figs. 5, 6). No locality information was provided. In the following year he published a description of the same shell, giving the measurements, "Long; 2. lat. 1 1/10 poll." (REEVE, 1843, page 91).

In 1858, Commandant Beau listed the species in a catalogue of the shells of Guadeloupe, West Indies (BEAU, 1858); subsequently HENRIK KREBS (1864, p. 35) cited BEAU's record in a catalogue of West Indian marine shells. Neither BEAU nor KREBS indicated the ownership of the specimens on which their respective records were based.

At the auction of the Dennison collection in 1865 two specimens were sold on the fourth day and are listed in the sale-catalogue as follows:

p. 33, Lot 665 "ONISCIA DENNISONI. This, and the companion lot 753, are exquisitely beautiful shells, in the finest possible condition, and it is supposed that no other specimens are at present known." (Anon., 1865).

p. 37, Lot 753 "ONISCIA DENNISONI, this and the other specimen are probably all that are at present known" (Anon., 1865). Lot 665 was purchased for 17 pounds and Lot 753 for 18 pounds; the names of the respective purchasers are unknown to us (DANCE, 1966, p. 210). In 1873, a specimen was sold at the auction of the collection formed by Thomas Norris (d. 1852) of Preston, Lancashire, and is listed in the sale-catalogue (of the second or "remaining" portion of the collection) as follows:

p. 17, Lot 757 "ONISCIA DENNISONI, a shell of extreme rarity" (Anon. 1873).

Neither the purchaser nor the price obtained are known to us (DANCE, 1966, p. 212). In 1876, one was sold at the auction of the collection formed by the Dutchman H. C. R. van Lennep (1820-1879) and is listed in the sale-catalogue as follows:

p. 12, Lot 161 "ONISCIA DENNISONI a great rarity (SOWERBY, 1876).

Again neither the purchaser nor the price obtained are known to us (DANCE, 1966, p. 193).

The few other shells of this species recorded in literature were collected after 1870 and must be dismissed from this inquiry.

On the basis of this admittedly scanty information, we consider that the holotype must be one of three shells; two of these are now in the British Museum (Natural History) and the other is preserved in the American Museum of Natural History. The smaller of the two in the British Museum once formed part of the collection of Hugh Cuming (1791-1865), acquired in its entirety by that institution in 1866 (DANCE, 1966, p. 167). It is labelled merely "*dennisoni*" and measures 31.7 mm in length and 23.0 mm in width. The larger shell once belonged to Mrs. de Burgh (*d.* 1881), a well-known collector whose shells, incorporated into the collection of V. W. MacAndrew (*d.* 1940), were acquired by the British Museum after MacAndrew's death (DANCE, 1966, p. 213). This shell too is labelled, by Mrs. de Burgh, merely "*dennisoni*" and measures 50.0 mm in length and 30.5 mm in width. The shell in the American Museum of Natural History once belonged to the English collector John Calvert, known for his magpie collecting activities in the late nineteenth and early twentieth centuries. In 1939, Calvert's collection of shells and other natural objects was bought by an American dealer and offered for sale in New York City (D'ATTILIO, 1950, p. 2). Among specimens from that collection obtained by Mr. Anthony D'Attilio and generously presented to the American Museum of Natural History were the type specimen of *Murex centrifuga* HINDS (EMERSON, 1960) and a specimen of *Morum dennisoni* (D'ATTILIO, 1955; EMERSON, 1967). The latter is undocumented and measures 53.5 mm in height and 30.5 mm in width.

The illustrations in the *Conchologia Systematica* (REEVE, 1842, pl. 253, figs. 5, 6) and the measurements given subsequently by REEVE (1843) are based on the same shell and are sufficient to eliminate the Cuming

specimen (Brit. Mus. No. 19671) as a contender for holotype status. The de Burgh and Calvert specimens, on the other hand, both approximate to the illustrations and measurements. We suggest that these were the two shells sold at the auction of Dennison's collection; that one came into Norris' possession (actually to a nephew, Thomas Norris [*?d.* 1873], who acquired the collection after his uncle's death) and one (possibly the same one) into van Lennep's; and that de Burgh and Calvert acquired one each. de Burgh probably acquired her specimen directly from the Dennison sale, Calvert his specimen from the van Lennep sale (de Burgh was collecting shells prior to the Dennison sale while Calvert seems to have become active rather later in the century). In 1919, J. C. Melvill (1845-1929) commented on the two Dennison specimens and said: "Type in the Mus. Brit.? . . . The specimen in the British Museum is, I presume, one of the two specimens then sold; what I believe to have been the other was offered by auction at Deventer, Holland, in July, 1876, at the sale of the Roeters van Lennep Collection, but I am ignorant of its destination" (MELVILL, 1919, p. 72). We have already shown that the Cuming specimen (the only one in the British Museum when MELVILL's paper was published) cannot be the holotype.¹

Calvert's shell (Plate 12, Figure 7) is a well-preserved specimen, but it is slightly larger than the measurements given by REEVE (1842). It also possesses weaker plications on the shoulder of the body whorl and has a wider outer lip than that of the specimen figured by REEVE (*cf.* Figure 6 with 7 of Plate 12). On the other hand, the de

¹ In a footnote to the original description in *Conchologia Systematica* REEVE, (1842: 212) says: "we have been informed that there is another specimen in existence but in very poor condition." Although we have not been able to determine the identity of this "second" specimen, it cannot, in any case, be considered a paratype because it was not used in the preparation of the description.

Explanation of Plate 12

Figures 1 to 3: *Morum strombiformis* (REEVE, 1842)

Figure 1: copy of original figure of holotype of *Oniscia strombiformis* REEVE, after REEVE, 1842, pl. 253, fig. 1; the width of the parietal callus is inaccurately shown in REEVE's illustration, *cf.* Figure 1 with Figure 2. Figure 2: Cuming specimen, holotype, in British Museum (Natural History), No. 1966723, no locality, photographs courtesy Dr. R. T. Abbott. Figure 3: immature specimen, in California Academy of Sciences, Loc. 1900, Cartagena Bay, Colombia, found dead on the beach, F. M. Anderson, collector. Figures approximately $\times 2$.

Figure 4: *Morum oniscus* (LINNAEUS, 1767), juvenile specimen, in American Museum of Natural History, No. 112483, from St.

Croix, Virgin Islands, G. Nowell-Usticke, collector; $\times 2$. Note the more inflated form, shorter spire, wider parietal callus, and coarser sculpture than in a specimen of about the same size and number of whorls of *Morum strombiformis* (*cf.* Figure 3).

Figures 5 to 7: *Morum dennisoni* (REEVE, 1842).

Figure 5: de Burgh specimen, holotype of *Oniscia dennisoni* REEVE, in British Museum (Natural History), No. 19601620, no locality. Figure 6: copy of original figure of holotype, after REEVE, 1842, pl. 253, figs. 5, 6. Figure 7: Calvert specimen, *ex* D'Attilio collection, in American Museum of Natural History, No. 128181, no locality. Figures approximately $\times 2$.



Figure 1

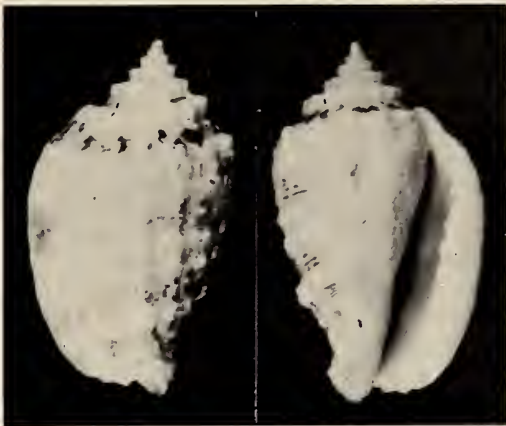


Figure 2



Figure 3

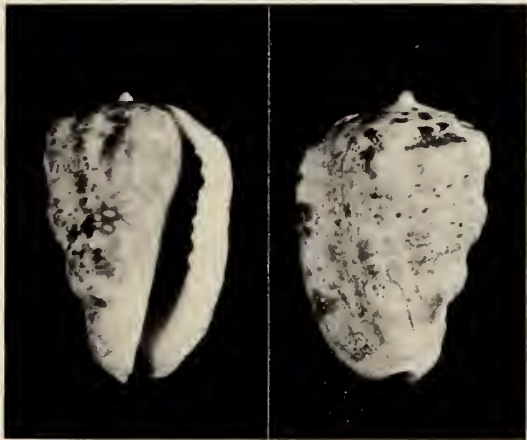


Figure 4

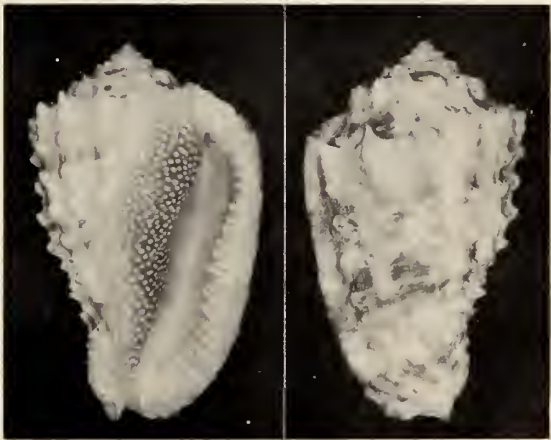
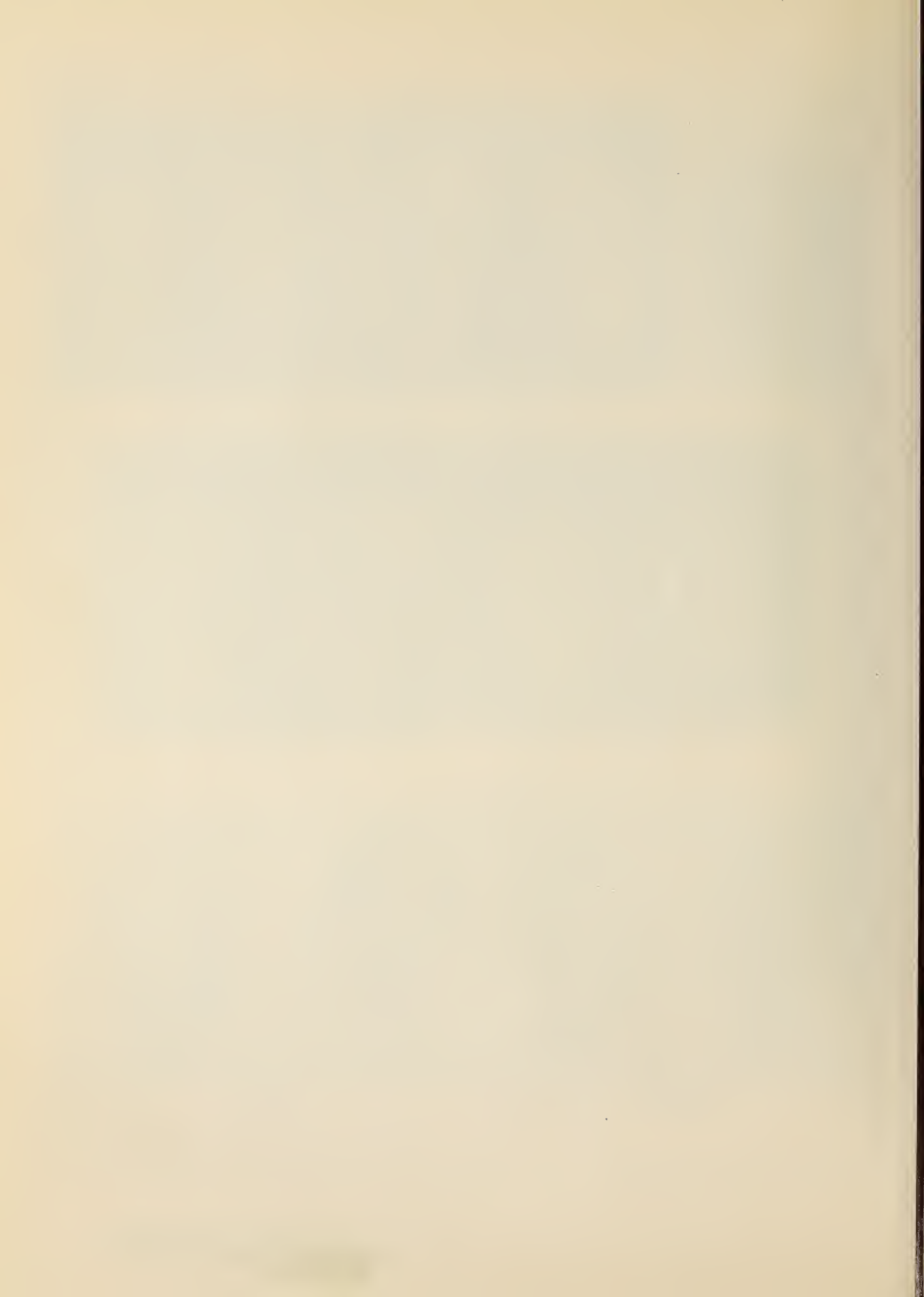


Figure 5



Figure 6

Figure 7



Burgh specimen, which is sparingly perforated in its upper whorls by a boring organism, has the same measurements as REEVE's figure, and it appears to be morphologically more like REEVE's original illustrations (*cf.* Figure 5 with 6 of Plate 12). Consequently, we consider the de Burgh shell to be the holotype of *Oniscia dennisoni* REEVE, 1842.

Morum (Cancellomorum) dennisoni (REEVE, 1842)

(Plate 12, Figures 5 to 7)

Oniscia dennisoni REEVE, 1842: 211, pl. 253, figs. 5, 6, no locality; REEVE, 1843: 91, no locality; REEVE, 1849, *Oniscia* pl. 1, fig. 6, no locality; BEAU, 1858: 7, Guadeloupe, Lesser Antilles; KREBS, 1864: 35, repeats BEAU's record.

Oniscidia dennisoni REEVE, DALL, 1889: 20, 231, Arrow-smith Bank, Yucatán, Mexico, in 130 fathoms, coral (U. S. N. M. 93742).

Morum dennisoni REEVE, MELVILL, 1919: 72; CLENCH & ABBOTT, 1943: 5, 6, pl. 4, fig. 5, Sandy Bay, Barbados, Lesser Antilles, in 75-100 fathoms, a poorly preserved specimen that may have been ingested by a fish (M. C. Z. 124699); DANCE, 1966: 193, 210, 212, 214, pl. 22c (figured specimen *ex de* Burgh Collection, B. M. N. H. 19601620).

Morum (Cancellomorum) dennisoni REEVE, EMERSON, 1967: 290, pl. 39, figs. 1a, 1b (specimen *ex* Calvert Collection, A. M. N. H. 128181).

Type locality: Guadeloupe Island, Lesser Antilles, designated by MAURY (1922: 119) and CLENCH & ABBOTT (1943: 6), on the basis of the record of BEAU (1858).

Type depository: Holotype, British Museum (Natural History), No. 19601620, *ex de* Burgh Collection.

Description of holotype: Shell triangularly ovate, imperforate, solid and strong; whorls seven, shouldered, and formed below the shoulder angle. Spire depressed, slightly produced. Whorls longitudinally compressed to form blade-like plications, eaneellated with numerous narrow ribs forming small knobs which are longer and more produced on the shoulder of each whorl. Interspaces between nodose ridges with numerous axial threads crossed by fewer spiral threads. Parietal shield broadly expanded, thick, minutely pustulate; pustules weakly lineate. Outer lip reflected, thickened, denticulate along entire inner margin with irregular ridges. Base color whitish with 4 spiral bands of light brown on the body whorl and with irregular patches of brown on the spire, on the outer margin of the outer lip, and on the nodose ridges of the body whorl. Parietal shield a vivid reddish brown (blood-red on fresh specimens, *fide* REEVE, 1849), pustules whitish. Measurements 50.5 mm in length, 30.5 mm in width. Operculum not seen.

New records (specimens not previously reported in the literature):

S.S.E. of Freeport, Texas, in 34 fathoms, by shrimp net, Allen Knight, in 1962; one specimen, dead, faded and iron stained in collection of Mildred Tate; another dead specimen taken at the same time.

Off Pensacola, Florida, 30° 02' N, 86° 55' W, 64 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 353, May 25, 1951, one dead specimen, mud bottom.²

Off Tarpon Springs, Florida, 28° 15' N, 84° 53' W, 60 fathoms, dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 919, March 11, 1954, one live specimen, coral bottom, temperature 65° F.²

Off Strangers Cay, Bahamas, 27° 08' N, 77° 52' W, 160 fms., dredged by Bureau of Commercial Fisheries M/V *Silver Bay*, station 3474, October 25, 1961, one specimen, coral bottom.²

Off Matthew Town, Great Inagua Island, 20° 54' N, 73° 37' W, 88 fms., dredged by Bureau of Commercial Fisheries M/V *Silver Bay*, station 3502, November 5, 1961, two dead specimens, coral bottom.²

On eastern edge of Quita Sueño Bank, off Nicaragua, 14° 05' N, 81° 21' W, 100 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 4928, June 8, 1964, two dead specimens, coral bottom.²

Off Piña, Panama, 9° 19' N, 80° 25' W, 75 fms., trawled by Bureau of Commercial Fisheries R/V *Oregon*, station 3587, May 29, 1962, one dead specimen, mud bottom.²

Off Punta San Blas, Panama, 9° 38' N, 78° 57' W, 65 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 5735, October 19, 1965, one live specimen, rocky bottom.²

Off Punta Guaniquilla, Puerto Rico, 18° 03' N, 67° 27' W, 165 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 2643, October 5, 1959, one dead specimen, muddy bottom.²

West of St. Martin Island, 18° 14' N, 63° 20' W, 76 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 5919, February 25, 1966, one live specimen, sponge bottom.²

Off Calibishie, Dominica, 15° 37' N, 61° 22' W, 34 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 5920, March 3, 1966, two live specimens, sponge bottom.²

Off Anse Quancery, Dominica, 15° 25' N, 61° 12' W, 60 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 5933, March 5, 1966, two live specimens, rocky bottom.²

² Deposited in the collection of the U. S. Bureau of Commercial Fisheries, Pascagoula, Mississippi, *teste* Harvey R. Bullis, Jr.

Barbados, obtained by the Smithsonian-University of Iowa Expedition, in 1918; one beach specimen from station 411 (U.S.N.M., No. 459829), one fragmental specimen, station 483, 90 - 100 fms. (U.S.N.M., No. 459830).

Off east coast of Barbados, 13° 02' N, 59° 34' W, 123 fms., dredged by Bureau of Commercial Fisheries R/V *Oregon*, station 5015, September 20, 1964, one specimen, rocky bottom.²

96 miles N of Georgetown, Guiana [British Guiana] 08° 10.9' N, 57° 48' W, 53 - 60 fms., dredged by R/V *Chain*, station 35, cruise 35, R. W. Foster, April 28, 1963; one specimen with animal (M. C. Z., Harvard University, No. 262149).

Northeast of Paramaribo, Surinam, trawled by fishermen and purchased from them by Mr. T. H. Munyan, March, 1965; one live specimen in the collection of Mr. Munyan.

Range: Gulf of Mexico: off Freeport, Texas, Pensacola and Tarpon Springs, Florida, and Yucatán, Mexico; off the Bahama Islands: Strangers Cay and Great Inagua Island; Caribbean Sea: off Puerto Rico, Lesser Antilles, Nicaragua, and Panama; and off Guiana and Surinam, in the western Atlantic. Living specimens taken in 34 to 76 fathoms (median of 60 fathoms), on coral, rocky, and sponge substrates.

II. Annotated List of Names that have been applied to Living Representatives of the Genus *Morum* RÖDING, 1798

Morum (*sensu stricto*)

Type species: *Morum purpureum* RÖDING, 1798 [= *M. oniscus* (LINNAEUS, 1767)], by M.

Strombus oniscus LINNAEUS, 1767, Syst. Nat., ed. 12: 1210 [West Indies]. Type material presumed lost (*vide* DANCE, 1967, p. 22).

Cypraea conoidea SCOPOLI, 1786, Delic. Flor. Faun. Insubr., prt. 2, p. 78, plt. 24, fig. 3 [= *M. oniscus* (LINNAEUS) *vide* CLENCH & ABBOTT, 1943, p. 4].

Morum purpureum RÖDING, 1798, Mus. Bolt., p. 53 [= *M. oniscus* (LINNAEUS)].

"*Oniscia tuberculosa* G. B. SOWERBY," 1st of name, 1824, The Genera of Recent and fossil shells, *Oniscia*, p. 2 [*nomen nudum*].

Oniscia tuberculosa "SOWERBY" REEVE, 1842, Conch. system., 2: 211, *Oniscia* plt. 253, figs. 2 - 4 [eastern Pacific]. Type material presumed lost. Type species of *Plesioniscia* P. FISCHER, 1884, by M.

Oniscia triseriata MENKE, 1830, Syn. method. moll. gen. . . ., Ed. 2, p. 64 [= *M. oniscus* (LINNAEUS) *vide* CLENCH & ABBOTT, 1943, p. 4].

Oniscia lamarkii DESHAYES, 1844, in LAMARCK, Hist. nat. anim. sans vert., Ed. 2, 10: 12 [= *M. oniscus* (LINNAEUS)]. Not "*Cassidaria* (*Oniscia*, SOWERBY) *lamarkii*" [*sic*] LESSON, 1840, Rev. Zool. Paris 3: 212, from "Australia," an unrecognizable taxon according to MELVILL (1919, p. 70). The type of Lesson's taxon is not in the collection of the Muséum National d'Histoire Naturelle, Paris, *teste* Dr. Bernard Salvat (*in litt.*).

Morum xanthostoma A. ADAMS, 1854, Proc. Zool. Soc. London for 1853: 174 [= *M. tuberculorum* (REEVE)]. Lectotype (here selected) in British Museum (Natural History), No. 1966721, *ex* H. Cuming collection.

(*Herculea*) HANLEY, in H. & A. ADAMS, 1858

Type species: *Oniscia ponderosa* HANLEY, 1858, by M.

Oniscia ponderosa HANLEY, 1858, Proc. Zool. Soc. London, p. 255, plt. 42, figs. 9, 10 [western Pacific]. Lectotype (here selected) in the British Museum (Natural History), No. 1966724, *ex* H. Cuming collection. We do not agree with TRYON (1885, p. 282) that *Morum exquisita* (ADAMS & REEVE) is the same species; neither does it resemble *M. ponderosa*, which is characterized by a non-papillate parietal callus, sufficiently to be placed in the same subgenus.

(*Cancellomorum*) EMERSON & OLD, 1963

Type species: *Morum grande* (A. ADAMS, 1855), by O. D.

Until recently, the cancellate species of *Morum* were commonly referred to either "*Oniscidia*" (SWAINSON, 1840, p. 299) or to "*Onimusiro*" (KIRA, 1955, p. 43; 1959, p. 51), neither of which is an available name. As WOODRING (1959, p. 202) has pointed out, "*Oniscidia*" is based on an apparent *lapsus* made by SWAINSON for *Oniscia* SOWERBY, 1824, a fact first noted by HERRMANNSEN in 1847. *Oniscia*, together with *Lambidium* LINK, 1807, *Ersina* GRAY, 1847, and *Plesioniscia* FISCHER, 1884, is a junior synonym of *Morum* (*s. s.*) RÖDING, 1798. The name "*Onimusiro*" was first used by KIRA (1955) in a caption for a figure of "*Morum* (*Onimusiro*) *grande*." KIRA (1955; 1959) did not present a diagnosis nor did he designate a type species for "*Onimusiro*." The International Code of Zoological Nomenclature, however, requires a definite fixation of a type species for genus-group names proposed after 1930 (Art. 13b), and new names published after 1930 must be accompanied by a statement purporting to give characters differentiating the taxon (Art. 13, a, i).

Thus, "*Onimusiro*" was not properly proposed, and we have not found a validation of the name in the literature, unless HABE (1964, p. 64) inadvertently validated it as a replacement name when he noted that "*Onimusiro*" substitutes *Oniscidia* SWAINSON, which was stated to be a misspelling of *Oniscia* SOWERBY. If his statement constitutes a validation, *Onimusiro* would date from HABE, 1964; consequently it would be referable to the synonymy of *Cancellomorum* EMERSON & OLD, 1963: 18.

Oniscia cancellata G. B. SOWERBY, 1st of name, 1824, The Genera of Recent and fossil shells, *Oniscia* figs. 1 - 3 [western Pacific]. Type material presumed lost.

Oniscia strombiformis REEVE, 1842, Conch. system. 2: 210, plt. 253, fig. 1 [West Indies]. Holotype in the British Museum (Natural History), No. 1966723, ex H. Cuming collection. Provenance not stated in the original description, but it is cited from "Honduras" by REEVE (1849) and MELVILL (1919, p. 71). CLENCH & ABBOTT (1943, p. 5), in a review of the western Atlantic species of the genus, suggested that the type specimen may have been obtained by Cuming in the Philippine Islands. As a result of the present study, a specimen with definite locality data was obtained on loan through the kind offices of Dr. Leo G. Hertlein of the California Academy of Sciences. It was found washed up on the beach at Cartagena Bay, Colombia, by Dr. F. M. Anderson in 1915. The specimen is worn, but agrees well with the description of REEVE's taxon. It has a shorter spire and a less mature outer lip than the type specimen (compare Figures 1 and 2 with Figure 3 of Plate 12 in the present paper).

Oniscia dennisoni REEVE, 1842, Conch. system. 2: 212, plt. 253, figs. 5, 6 [western Atlantic]. Holotype in the British Museum (Natural History), No. 19601620. See Part I of the present paper.

Oniscia exquisita ADAMS & REEVE, 1850, in A. ADAMS, The zoology of the voyage of H. M. S. Samarang . . ., Mollusca p. 35, plt. 5, figs. 3a, 3b [western Pacific]. The depository of the holotype was not known to MELVILL (1919, p. 72) and is not known to us.

Oniscia grandis A. ADAMS, 1855, Proc. Zool. Soc. London for 1853, p. 185 [western Pacific]. Lectotype in the British Museum (Natural History), No. 1966726, figured by YEN (1942, plt. 17, fig. 104).

Oniscia cithara WATSON, 1881, Journ. Linn. Soc. Zool., 15: 266; 1886, Rpt. Sci. Res. Voy. H. M. S. Challenger, 15: 410, plt. 34, fig. 6 [western Pacific]. Holotype in the British Museum (Natural History), No. 1887.2.0.1262. The unique type specimen is not fully grown. Not "*Oniscia cithara*. *Buccinum Cythara* BROCCCHI" G. B. SOWERBY, 1st of name, 1824, The Genera of Recent and fossil shells, *Oniscia* p. 2, fig. 5 [= *Buccinum cythara* BROCCCHI, 1814,

Conch. foss. Subappennina . . ., p. 330], an extinct species of *Morum*.

Oniscia macandrewi G. B. SOWERBY, 3rd of name, 1889, Proc. Zool. Soc. London for 1888: 567, plt. 28, figs. 1, 2 [western Pacific]. Holotype in the Melvill-Tomlin collection, National Museum of Wales, Cardiff, U. K.

Morum praeclarum MELVILL, 1919, Proc. Malacol. Soc. London 13: 69, text fig. [? western Pacific]. Holotype in the Melvill-Tomlin collection, National Museum of Wales, Cardiff, U. K.

Oniscidia bruuni POWELL, 1958, Rec. Auckland Inst. Mus. 5: 80, plt. 11, fig. 5 [western Pacific]. Holotype in the Zoological Museum, Copenhagen, Denmark.

Morum (Onimusiro) teramachii KURODA & HABE, in T. HABE, Coloured illustr. shells Japan II, 1961, Appen. p. 15, plt. 20, fig. 3 [western Pacific]. Holotype in the National Science Museum, Tokyo, Japan. No. 38900.

Morum (Onimusiro) uchiyamai KURODA & HABE, in T. HABE, Coloured illustr. shells Japan II, 1961, Appen. p. 16, plt. 20, fig. 5 [western Pacific]. Holotype in personal collection of Prof. Kawamura, Tokyo, Japan.

Morum (Cancellomorum) matthewsi EMERSON, 1967, The Veliger 9: 290; plt. 39, figs. 2 - 4 [western Atlantic]. Holotype in the American Museum of Natural History, No. 129201.

Morum (Cancellomorum) watsoni DANCE & EMERSON, new name for *Oniscia cithara* WATSON, 1881, not *Oniscia cythara* (BROCCCHI, 1814). Under the provisions of Articles 59b and 58 (9) of the International Code of Zoological Nomenclature WATSON's taxon is a secondary homonym and must be replaced (Art. 60b). *Vide supra*: *Oniscia cithara* WATSON, 1881.

"*Morum sobrinus* A. ADAMS" may be a manuscript name that is referable to one of the Recent cancellate species, although we have not found a citation to this taxon in the primary literature. This name appears in a recently published popular handbook. It is also on a label accompanying a specimen of *Morum macandrewi* (SOWERBY) that was recently received from Japan and is in the collection of the American Museum. It seems more likely, however, that "*Morum sobrinus*" is a *lapsus* for *Murex sobrinus* of ARTHUR ADAMS (1863, p. 370) from Japan.

(*Pulchroniscia*) GARRARD, 1961

Type species: *Pulchroniscia delecta* GARRARD, 1961, by M? Fixation of the type species of "*Pulchroniscia delecta* gen. et sp. nov." by monotypy is open to question. The formula, "gen. n., sp. n.," was not acceptable for fixing generic type species after 1930 by the provisions of Art. 68(a) (i) of

the International Code of Zoological Nomenclature. This taxon is tentatively placed in the genus, in the absence of knowledge of the soft parts.

Pulchroniscia delccta GARRARD, 1961, Journ. Malacol. Soc. Austral. no. 5, p. 16, pl. 1, figs. 9a, 9b [western Pacific]. Holotype in the Australian Museum No. 63343. The description was based on a single specimen, and no further specimens have been found, *teste* T.A. Garrard (*in litt.*, April 1967).

III. Annotated List of the Fossil Representatives of the Genus *Morum* RÖDING, 1798, reported from the New World

Morum (*sensu stricto*)

Morum oniscus (LINNAEUS), GABB, 1881, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, p. 357, [late] Pliocene, Moin Hill, Costa Rica. [Geological range: Pliocene to Recent].

Morum floridana [*sic*] TUCKER & WILSON, 1933, Bull. Amer. Paleont. 18 (66): 71; pl. 10, figs. 3-5, "Pliocene," Prairie Creek, Florida. The shell of this taxon is stated to differ from that of *M. oniscus* (LINNAEUS) in having a higher spire and by possessing more axial ribs.

Morum tuberosum "SOWERBY" (REEVE), JORDAN, 1936, Contrib. Dept. Geol. Stanford Univ. 1: 114, Pleistocene, Magdalena Bay, Baja California, Mexico; PALMER & HERTLEIN, 1936, Bull. South. Calif. Acad. Sci. 35: 68, Pleistocene, Oaxaca, Mexico; HERTLEIN & STRONG, 1939, Proc. Calif. Acad. Sci. 33: 370, Pleistocene, Isla San Salvador, Galápagos Islands, Ecuador. [Geological range: Pleistocene to Recent].

(*Cancellomorum*) EMERSON &
OLD, 1963

Oniscia scotlandica TRECHMANN, 1925, Geol. Mag. 62: 491, pl. 24, figs. 18a, 18b, Scotland Beds, Barbados; middle Eocene according to W.P. Woodring (*in litt.*, June 16, 1966).

Morum ("Oniscidia") species WOODRING, 1959, U.S. Geol. Surv. Prof. Paper 306-B: 202, 203, pl. 25, figs. 11, 17, mid-Eocene, Gatuncillo formation, Panama Canal Zone. [Record based on a small fragment].

Morum caracoli (ANDERSON, 1938), Geol. Soc. Amer. Spec. Papers, no. 16, p. 19, pl. 1, fig. 5, Eocene, Colombia, as "*Athleta* (*Volutospira*) *caracoli*." CLARK, in CLARK & DURHAM, 1946, Geol. Soc. Amer., Mem. 16: 35, pl. 21. According to WOODRING (1959, p. 203), ANDERSON's taxon ". . . is an earlier name for *M. corrugatum*, if not also for *M. chiraense*."

Morum (*Herculea*) *corrugatum* CLARK, in CLARK & DURHAM, 1946, Geol. Soc. Amer., Mem. 16: 34, pl. 21,

figs. 5, 21, late Eocene of Colombia (see remarks for *M. caracoli*).

Morum ("Oniscidia") cf. *M. antiquum* (BAYAN), WOODRING, 1959, U.S. Geol. Surv. Prof. Paper 306-B: 203, pl. 25, figs. 12, 13, late Eocene or early Oligocene, Bohio(?) formation, Gatun Lake area, Panama. WOODRING records an incomplete, strongly cancellate, low spired specimen, which apparently represents an unnamed species, and he compares it with BAYAN's taxon, a species described from Eocene deposits in Italy.

Morum peruvianum OLSSON, 1931, Bull. Amer. Paleont. 17 (63): 95, pl. 17, figs. 5, 7, late Eocene or early Oligocene of Peru. Stated to be related to *M. harpulum* (CONRAD).

Morum chiraense OLSSON, 1931, Bull. Amer. Paleont. 17, no. 63, p. 96, pl. 17, figs. 6, 8, late Eocene or early Oligocene of Peru (see remarks for *M. caracoli*).

Oniscia harpula CONRAD, 1847, Proc. Acad. Nat. Sci. Philadelphia 3: 288; 1848, Journ. Acad. Nat. Sci. Philadelphia, ser. 2, 1: 119, pl. 12, fig. 6, [Oligocene], vicinity of Vicksburg, Mississippi.

Oniscia domingensis SOWERBY, 1850, Quart. Journ. Geol. Sci. London 6, pt. 1, p. 47, pl. 10, fig. 3, "Santo Domingo," PILSBRY, 1922, Proc. Acad. Nat. Sci. Philadelphia 73: 363 [Miocene, Dominican Republic].

Oniscia coxi TRECHMANN, 1935, Geol. Mag. 72 (12): 543, pl. 21, fig. 17, Grand Bay Beds, "L. Miocene = Burdigalian(?) = Cercado or Baitoa beds of Haiti," Carriacou Islands, West Indies.

Morum chipolanum "DALL" MAURY, 1925, Brazil Serv. Geol. Mineral. Monogr. 4: 115, 617, pl. 4, fig. 4, early Miocene, [Chipola Formation], Florida; GARDNER, 1947, U.S. Geol. Surv. Prof. Paper 142-H: 538, pl. 54, fig. 18, as "*Morum chipolanum* (DALL, ms.) GARDNER, n. sp.," Chipola formation, Calhoun County, Florida.

Morum ("Oniscidia") cf. *M. chipolanum* MAURY, WOODRING, 1959, U.S. Geol. Surv. Prof. Paper 306-B: 203, early Miocene, Culebra formation, Gaillard Cut, Panama Canal Zone. WOODRING records a small, incomplete specimen, with strongly developed axial ribs and axial lamellae, that is reminiscent of *M. chipolanum*.

Morum chipolanum tampanum MANSFIELD, 1937, Florida Dept. Conserv., Geol. Bull. 15: 141, early Miocene, Tampa limestone, Florida; type specimen figured by DALL, 1915, U.S. Nat. Mus. Bull. 90, pl. 12, fig. 28, as "*Morum domingense* SOWERBY." Not SOWERBY, 1850.

Morum harrisi MAURY, 1925, Brazil Serv. Geol. Mineral., Monogr. 4: 115, pl. 4, fig. 14, early Miocene, Rio Pirabas, Pará, Brazil.

Morum (*Oniscidia*) *obrienae* OLSSON & PETIT, 1964, Bull. Amer. Paleont. 47 (212): 555, 556, pl. 80, figs. 8, 8a